

**SurfingThroughNoise™**  
riding the online knowledge wave

by **George Lorenzo**



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## Chapter One

### What Is This World Wide Web?

#### Looking Back, It Seems Like the Stone Age

It's hard to believe that not so long ago in the late 1960s and early 1970s us baby boomers consumed all of our news from only three major television networks and our local newspapers. Our primary communication device was a black rotary telephone, and many of us had party lines that we shared with other folks in the neighborhood. If you happened to share a line with a loquacious neighbor, you were out of luck until his or her long conversation ended. One of my friends grew up in a relatively poor neighborhood where the telephone booth on the corner served as the primary communication device for a number of families on the street where he lived. "Hey, Mister or Misses so and so," a fellow neighbor, who happened to be within close proximity to the booth, would shout from across the street, "there's a telephone call for ya!"

For entertainment, television held the main stage, with non-violent, non-sexually oriented shows such as "My Three Sons," "Leave It to Beaver," "Father Knows Best," "Captain Kangaroo," "The Ed Sullivan Show" and "Mitch Miller" attracting our eyeballs and undivided attention. There wasn't a whole lot of viewing choice, but shows like these were enough to keep us entertained. We also had full-color comic books for our fantasy reading pleasure. And game playing was the real stuff held outdoors in the fresh air and sunshine (or lack thereof - I grew up in Buffalo, NY) of any season.

When we conducted research for homework, we went to the dictionary, and, if we were from a reasonably well-off family, we may have had a lovely set of encyclopedias to draw knowledge from. In those days, a door-to-door encyclopedia salesman could make a decent living. At my house, we had a half-set of Funk & Wagnel's - up through the letter J - that my mother purchased piecemeal at a discounted price from the local grocery store. I remember these 12 or so volumes actually serving my siblings and I pretty well in times of knowledge needs, despite being short sighted in its entirety.

Our homework assignments, of course, were typically composed with pen or pencil on paper. As we learned how to type, assignments were composed on manual typewriters with a special gray eraser nearby. And those who happened to have an electric typewriter with a backspace eraser at home were considered on the cutting edge of high technology.

Seems like the sixties and seventies were the "Stone Age." Yes, to state the obvious, things have changed dramatically since those relatively uncomplicated days. For a contrast beyond anything we could have imagined, just take a look at the "connected" teenager of today who has grown up with the Internet.

Somewhere between e-mail and BitTorrent, we all had to leave our text-based world and enter the new world of information and communications technology (ICT). As a new generation enters chat rooms, text messages each other, talks away on cell phones, plays in virtual environments, and posts their souls on social networking sites, us older text-oriented adults have had to learn how to deal with a new information and communications order (or disorder, depending on where you sit and think) unlike anything we have ever seen before. And with this change has come some interesting reactions that deserve our attention.

### **Fearing the Different**

Henry Jenkins, author, professor and founder and director of MIT's Comparative Media Studies Program, explains how many parents, for instance, are frightened by the implications of their children growing up in a world that is very different from the world they grew up in. Parents who were raised during a time in which MySpace did not exist often react instinctively or emotionally, rather than intelligently, to any social networking issues and challenges. As Jenkins notes, dealing with MySpace does not allow parents to fall back on those tried and true responses that originated from child-raising theories and concepts of the past.

"It is one of a dozen things you have to formulate a response to every

day, and you are stressed out about it,” Jenkins says. “So, you see some sensationalistic report on a cable news channel that pumps up the fear that kids are at risk when they go on MySpace. It hits at a very visceral level, and you are afraid that you can’t adequately protect your child. So you put pressure on the schools and political leaders to stop it.”

Jenkins was referring to the Deleting Online Predators Act (DOPA), a measure that, to the horror of Internet geeks everywhere, the House of Representatives passed in 2006. Fortunately, it failed in the Senate. However, to our dismay again, another DOPA bill was introduced to the House in early 2007. DOPA requires schools and libraries to block access to a lots of wonderful, interactive web content, including “websites that let users create web pages or profiles or offer communication with other users via forums, chat rooms, e-mail or instant messaging.”

In effect, DOPA would completely block students from going to any social networking websites, such as wikis and blogs, as well as prevent them from using e-mail and instant messaging on any of their school’s Internet-connected computers. Anything on the web that is interactive would not be accessible. Jenkins calls this kind of legislation “totally out of wack” and “ill conceived.” Why? Because DOPA is an irrational response to today’s digital age. Rather than supporting our teachers and librarians in a quest to assist young people with applying rational, safe and practical ways for using ICT, we are saying let’s close and lock the library doors, Jenkins notes.

### **The Noise Factor**

DOPA is only one example of how “noise” surrounds the worldwide adoption of innovative and new ICT. By noise, I mean “incomprehensibility resulting from irrelevant information or meaningless facts or remarks,” as defined by WordNet Search, an online lexical database of English, developed under the direction of George A. Miller, distinguished Princeton University professor emeritus. I also refer to the 2e definition of noise from Merriam-Webster’s Collegiate Dictionary, 11th Edition: “Irrelevant or meaningless data or output occurring along with desired information.”

The DOPA reaction is full of “incomprehensibility” on the part of its supporters who do not understand that ICT is here to stay; that our children will need to acquire the fullest understanding and keenest abilities when using ICT throughout their lives in order to compete in a global economy; that although there is a negative side to the overabundance of “irrelevant and meaningless” (and pornographic) web content out there

today (see YouTube as a prime example of an overabundance of crap), there is also plenty to be desired. And it is all accessible from the tip of our fingertips pressing on buttons that connect us to the web and enable us to trade and distribute valid information for the benefit of all web citizens.

### **Surfing Through Noise**

Yet, many web surfers do not know how to navigate through all the noise in order to find authoritative and trustworthy information.

Learning how to find and analyze the kind of information that can help us solve problems and challenges, answer our deepest questions, and perhaps bring about positive change in our culture and politics is what every web-savvy and responsible citizen needs to pursue more ardently than ever before.

As this ocean we call the web continues to expand ferociously into something we cannot predict, two elements of the web are certain: On the pessimistic side of life, there's a strong cross current that floats garbage, misinformation, and lies. And, on the optimistic side of life, there's another strong cross current containing gifts of knowledge, useful information, and the possibility for valuable interactive connectedness. Being able to find and consistently surf the latter cross current and stay balanced – and thus avoid the noise – is a skill-set that requires hard and patient work, good critical thinking and, to use a popular Beatles' phrase, “a little help from my friends.”

### **Information Literacy**

In the halls of academia, and especially in the halls of college and university libraries, “information literacy” is the term most often used to define our ability to find and collect authoritative and trustworthy information and then effectively share it with others. How do we become skilled at finding, evaluating and using information, both discovered and published ourselves on the Internet, in positive ways? As lifelong citizens of the Information Age, the answer to this question seems to grow in complexity every day. One of the reasons for the complexity is due to the two aforementioned cross currents playing out in numerous new and varied forms of information dissemination that change as quickly as they are born. We look at, and/or participate in, blogs, wikis, video logs, podcasts, listservs, discussion forums, social networks, social bookmarks, PowerPoints, webinars, instant messaging, text messaging, RSS feeds, citizen journalism, scholarly journals and abstracts, search engine results, websites with reader-recommended news, new and rapidly growing forms

of ubiquitous computing and a host of other portals to information and online communication tools. That set of encyclopedias that we learned how to trust not so long ago has crumbled into dust.

Peter Morville, an information architecture consultant for companies such as AT&T, IBM, Microsoft and Yahoo, and author of a really good book titled “Ambient Findability: What We Find Changes Who We Become,” says we are going through a transition period, and it is anyone’s best guess as to how long this transition will last.

“I think back when I was a kid and I had my single-volume encyclopedia,” Morville explains. “It was a wonderful resource, and it had a really nice feeling that if you had any question you could just look it up in your book. To some degree the whole traditional K-12 education system was oriented that way, with this notion of one authority and one history. I went through my education system with this idea that I was learning the one truth. Now many of us are in this period of transition where we are exposed to many different perspectives, many truths and many resources, so much so that it can feel overwhelming.”

So, what can we do about it? The straight-to-the-point and simple answer is to become information literate; in other words – as defined by the Association of College and Research Libraries (ACRL) – learn how to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.”

A more complex answer is that, in addition to becoming information literate, we need to become visually literate, new-media (or Web 2.0) literate, and information fluent - or to put everything under one banner, we can simply call it 21st Century literacy. Let’s take a deeper look at all of these, beginning with information literacy as it relates to, in particular, search engine technologies and, more specifically, Google.

### **Our Over Reliance On Google?**

A key word in the ACRL definition of information literacy is “evaluate.” To begin with, any good educator – including librarians who typically do not get the recognition they deserve for being educators – will explain that building a person’s ability to evaluate information entails addressing what it means to be a critical thinker. Applying this notion to the way in which we customarily search for information over the Internet brings us to the number-one search engine in the world, Google.

A good question to start with is have we become overly reliant on Google? Many academic librarians and others who analyze and report on search engine technology say that using Google as a primary source of

information has major drawbacks and negative consequences. In short, the overuse of Google can decrease one's ability to conduct valid, full-bodied and meaningful research.

Seth Maislin, an information architect and president of the American Society of Indexers, explains that, ironically, "the flaw lies in Google's strength: social algorithms." Maislin's point is that Google's page-ranking system is influenced by networks of links. It basically rewards those websites that have the largest number of other websites that link to them, regardless of the quality of content. Maislin, for instance, explains how, at one time, the Google search results for the word "Jew" typically resulted with the number one listing being a website known as JewWatch.com, which happened to be an offensive and inflammatory collection of antisemitic content. In his blog, at <http://maislin.blogspot.com/>, Maislin elaborates:

This happened because a large number of supporters of this site tended to build links to it; then, those who were outraged or amused also linked to it within their protestations. In the end, the social algorithms at Google recognized how popular (i.e., "linked to") this site was, and in response rated it very highly - in fact, rated it first - compared to all other websites with the word "Jew" in the title. Eventually, those who were enraged by this content fought back by asking as many people as possible to link somewhere else, specifically the Wikipedia definition of Jew. Over time, more people linked to Wikipedia than to JewWatch, and so the latter dropped into second place at Google. This process of building networks of links in order to influence Google's social algorithm is called "Google bombing." In other words, when the people who hated the site acted together in a large group, Google's social algorithms responded. <sup>1</sup>

Maislin also believes that Google's advertising-revenue business model affects its search results in interesting ways. For example, if the best, most authoritative and trustworthy search results came up on the first page, most people would not navigate any further through Google's results and hence not view as many Google advertisements. Basically, if the first-page results are less than ideal, users would be more likely to click on the next page and view more advertisements. "When you go to Google, what inspires you to keep clicking on the next page of results?" Maislin asks rhetorically. "Maximizing ad revenue is probably important to Google. If they put too many ads on the first page of their search results, people

would leave. So what you are looking for is not perfection (in first-page search results); what you are looking for is something close to perfection” (so people will click through to the next page).

### **The Easy Way Out**

“Anyone conducting research who only goes to Google is not really thinking critically,” adds Steven Bell, associate university librarian for research and instructional services for the Temple University Libraries. “They are just doing the most easiest and convenient thing that comes first in their mind. I don’t mind them (higher education students) using any Internet search engine if they also plan out a strategy that involves two or three other databases within their discipline, or through something that is a general database that would give them multiple sources of information so they could assess and evaluate what they’re finding through a form of triangulation.”

### **Using Library Databases**

Nonetheless, Bell adds that navigating through most academic library databases, for instance, is often a cumbersome and frustrating experience. Plus, when it comes to conducting research online in our rapidly changing digital world, student behaviors are changing dramatically. Today, many students typically give up the possibility of more fruitful research results if information isn’t found instantaneously through one, simple Google-like search box.

Bell explains that part of his job is to change students’ opinions about the difficulties and challenges often associated with online library research tools. “Currently, when they first look at online library research tools, the first thing that comes to their minds is ‘I don’t need these. They are too complicated.’ And we even see this in our own profession now, with librarians saying ‘Well, library databases are too confusing. Students don’t understand them,’” Bell explains. “And I agree, but sometimes you need to sit down and learn something. Physics is complicated, too, but if you want to be an engineer you are going to have to take the necessary time to learn about physics. That’s all part of being a critical thinker.” Bell adds that as faculty build more information literacy-oriented modules and exercises, by discipline, into their classroom instruction and homework assignments, “critical thinking will start to happen more naturally rather than being a forced behavior that we push on students.”

## Visual Literacy

Critical thinking also applies to the visual aspects of information literacy, especially since children are growing up with more visual stimulation from television shows and electronic learning and gaming environments than ever before. Unlike us baby boomers, they are not text-centric, but instead image-centric in their consumption of information.

Susan Metros, a professor in the Department of Design at Ohio University, explains how “misrepresenting something visually or not understanding the power of visual images in anything you do can almost be life threatening now.” For example, Metros points to the infamous set of Danish caricatures depicting the Prophet Muhammad that set off worldwide protests and condemnations resulting in tragic violence and death. Indeed, the power of images can have enormous implications.

Being visually literate today means, in part, that we have an understanding of how images -both moving and still and ultimately published online - are created and manipulated. “We tend to think, if we see it, we believe it,” says Metros. “But your thirteen-year-old can manipulate images using Photoshop (sophisticated image-manipulation software made by Adobe). And news organizations and big media frequently crop images to give us different perspectives. I have a wonderful image of George Bush meeting with the troops in Germany. It was on the front page of USA Today,” she adds, sardonically. “It was so obviously Photoshopped. Someone looked at the original photo and said, ‘Oh, we need an African American, an Asian and a woman (added to the troops in the background).’ You could see the feathering effect around the images, but there was nothing noted near the image that said it was a (fabricated) collage.”

## New Media and Our Participatory Culture

In addition to being information literate and visually literate, one needs to understand what’s happening in the so-called worlds of new media and the participatory web. New media takes into account all of the most recent information and communications technologies that are driving news and entertainment to our computers and mobile devices. The participatory web, which is part of today’s new media environment, is also referred to as “user-generated content,” “we media,” “social media,” the “democratized web” and a variety of other names.

According to Carleton College Cinema and Media Studies Department Professor John Schoot, who teaches an innovative six-credit course titled “Participatory Media,” the participatory web is where anyone can gather, produce and publish their knowledge about anything to the world through

a wide variety of new media, such as weblogs, photo blogs, podcasts and videoblogs. It is the ability to find, collect, archive, share and remix audio, video and images online in a new Do-It-Yourself (DIY) culture.

What are the new realities of the participatory web? There are two schools of thought. One is that the participatory web is like the Tower of Babel and only adds to an already overabundance of irrelevant, hard-to-comprehend information published online. The other is that the participatory web has become the home for new individual voices and like-minded communities of interest that are catalyzing meaningful cultural and political change, with the same, or greater, level of credibility and importance as professional mass media.

Some of the literature about these two realities have strong voices. For instance, Jaron Lanier, computer scientist and *Discover Magazine* columnist, referred to the participatory web, ala wikis and other forms of social networking, as a new kind of social collectivism driven by a hive mind that is dangerous, stupid, boring, and, at times, capable of lowering the overall expectations we hold for individual human intellects.<sup>2</sup>

Best-selling author Steven Johnson added his take on Lanier's point of view, when he wrote that:

A swarm of connected human beings is a fantastic resource for tracking down software bugs or discovering obscure gems on the web. But if you want to come up with a good idea, or a sophisticated argument, or a work of art, you are still better off going solo.<sup>3</sup>

### **Freedom Online: Great Promise or Not?**

Yale Law Professor Yochai Benkler wrote a 515-page book about the participatory web (and much more) titled "The Wealth of Networks: How Social Production Transforms Markets and Freedom." In a nutshell, Benkler asserts that we are in the midst of a new information age that has given us the freedom to actively participate in a networked information economy, i.e. the participatory web, that is not motivated by financial profit or managed by an industrial complex.

This new freedom holds great practical promise: as a dimension of individual freedom; as a platform for better democratic participation; as a medium to foster a more critical and self-reflective culture; and, in an increasingly information-dependent global economy, as a mechanism to achieve improvements in human development everywhere.<sup>4</sup>

Nicholas Carr, former executive editor of the *Harvard Business Review* and author of a blog called “Rough Type,” takes issue with Benkler’s point of view. “I think Benkler is absolutely right,” he says. “Social production, voluntary labor and cooperation over the Internet is a very real phenomenon. Where I take issue with him is in his belief that this free social production exists outside of the market economy, that it is independent of managerial structures and independent of what he calls the pricing system. In fact I think that we are seeing social production – rather than being separate from the market system – is very much being incorporated into the market system, because companies are realizing that they can draw on this content that is being produced for free.”

Carr further elaborates, saying that Benkler’s wealth of networks will ultimately become similar to how mass media has always worked. “The people who are able to produce the most valuable and most popular content are going to end up getting paid. Benkler’s mistake is in trying to draw too clear a distinction between social production and market production. I think they are going to merge together into some kind of blend. His idea that there is some kind of purity in social production is not going to hold up.”

### **The New Knowledge Culture and the Everyman**

David Weinberger, co-author of the international bestseller “The Cluetrain Manifesto,” author of JOHO the Blog, and fellow at Harvard’s Berkman Center, provides another optimistic point of view regarding the participatory web. He cites Wikipedia, for instance, as proof of concept in how a shift in our knowledge culture continues to develop rapidly and in positive directions since the mid 1990s when Netscape ignited the Internet boom.

“Wikipedia is proof that a resource as good as most encyclopedias, and in some cases better than most encyclopedias, can emerge from a decentralized group of people whose expertise has no external validation; it is not visible. That is a liberating idea. It can be done. Presumably we can have some hope that various forms of collaborative efforts can work in other areas, as well, for example, in scientific research and pharmaceutical research and in education and so forth.”

Weinberger believes that although Wikipedia does not have good editors in the traditional sense, “it does have alert readers that seem to be doing a pretty good job in most of the areas.” And although it can be difficult for the “everyman” to surf through all the online noise and understand, for instance, that Wikipedia is very often not the best source of

valid information, “we have always been very good in real life with judging credibility and nuance. Of course, we get fooled, too, but, in general, we know that if it looks like *The National Inquirer*, we should take it with many grains of salt.”

Weinberger goes on to say that “the biggest, most controversial claim that has emerged from the web in the past five years is that, in fact, the interaction between people unknown to each other tends, in some circumstances, to produce reliable knowledge. That is the claim. I tend to think that it does and it doesn’t. A lot of the most interesting developments on the Internet have been exactly around us, together, figuring out how we are going to figure out who to trust and believe.”

Like Weinberger, Wade Roush, former West Coast senior editor of MIT’s *Technology Review Magazine*, is not so much concerned about today’s everyman being unable to decipher the vast and varied quality of credibility that lives on the web. “I put a lot of trust in people’s good sense,” he says. Roush, however, might disagree with Weinberger’s views on Wikipedia. “At the *Technology Review* we have a very rigorous fact-checking process, and the fact checkers will not accept Wikipedia as a source for back-ground information, and for good reason. You have no idea whether a Wikipedia article is mostly true or was just hacked by someone and is now all wrong.” On the other hand, Roush does admit that “you can use Wikipedia as a launching point for finding more information (on just about any given topic).”

### **Questions About Scholarly Authority, Books and the Library of Tomorrow**

Roush also brings up a good conversation about Net Generation students in higher education and their notions concerning the definition and recognition of scholarly authority discovered online. “I would hate to be a college professor right now because I would not know how to deal with term papers that come in where the entire bibliography is comprised of URLs,” he says. “I think we are in midst of a generational change in the understanding of what scholarly authority is.” Roush adds that when he was in college, before the web, his senior thesis was based on books and other printed materials that he had to dig out of his university’s academic library. “Now it is possible to write an entire undergraduate thesis without ever setting foot in a library,” he says. “And I think you can imagine having a hard time arguing to a 22-year-old today that his or her thesis would have been more credible if they had gone to the library and found a bunch of books. They would probably say those books are old.”

Roush is right, but this kind of thinking is no longer confined to only 22-year-olds. In short, college and university libraries are striving for a better understanding of what really constitutes scholarly research in a digital age. Like all of higher education, libraries are in the process of figuring out the best ways and methods for discovering and sharing intelligent, trustworthy information that is already published, or publishable, online.

Due to the growth of mass digitization and new communications and information technologies, higher education library physical spaces are changing into socially interactive learning environments where books are not as prevalent as they have been in the past. This point was brought out, anecdotally, in a series of Association of American Universities workshops in which leaders at research institutions were asked about their plans to build more libraries. The general consensus was that newly built libraries would not be shelving as many books in their primary physical space as they have in the past, with vast quantities of their holdings being moved into off-campus high-density, retrievable storage facilities. Then, the question became “What are you going to put in your libraries?” The common denominator was a coffee shop.<sup>5</sup>

In a sense the library was becoming a people place that provided the tools, the services, the expertise to support learning and scholarship, but along with that, an environment for social interaction. So it raised the obvious question of what is the university library in the digital age.<sup>6</sup>

The answer is akin to the old cliché that the more things change the more they stay the same:

Because of the wealth of online materials, many scholars can do their research and writing anywhere, yet ironically we find ourselves going to the library no less frequently than we did before. We go for help with using online resources and to learn about software that supports our scholarship. . .<sup>7</sup>

Only now they can also grab a cup of coffee and connect with like-minded colleagues in a more socially interactive space.

### **Surfing Through Noise Via Your Public Library Access**

On another level concerning access to the growing wealth of online library materials, Gary Price, director of information resources at Ask.com,

founder and chief editor of the popular ResourceShelf weblog, and a distinguished academic librarian, frequently talks about how most people are unaware of the vast amount of viable, authoritative and trustworthy online materials available through public libraries across the country.

“What gets past just about everybody I have spoken to is what public libraries have to offer,” he says. “Public libraries have full text and content of hundreds of different databases and, depending on the library, it’s all available for free 24/7/365. All you need is a library card. For example, in the Washington, DC metro area there is reciprocity between all the major libraries at the county level. Through the Arlington County public library in Virginia I have access to the full text and images of every article published in the Wall Street Journal, the Washington Post and the New York Times.”

Moreover, Price says that most libraries in the United States, either at the state or county levels, now offer 24/7 Q and A services. At some public library systems, for instance, patrons can chat online with a professional librarian who will then direct them to viable sources on the open web as well as to the databases available through their public library system. For examples, Price points to California’s, AskNow.org and Massachusetts’ MassAnswers.org, both of which have live online interactive reference services.

“The solution (to effectively surf through noise) is to become a better consumer of what is out there and understanding the strengths and weaknesses of each product,” Price continues. “As a consumer I want to know what each search engine has to offer and where the information is coming from. I don’t think enough attention is being put towards that, especially in our educational system.”

### **As We See More, Do We Learn More?**

Mark Glaser, author and host of the PBS-sponsored MediaShift weblog, talks about how it has become more important than ever to educate ourselves and to take a closer look inside the origins and manifestations of our sources of information inside this new media, this new participatory/DIY culture, this new knowledge culture. “I think we were lazier before; we just accepted what we were fed,” he says, referring to our past habits for ingesting news and information from a much lesser quantity of sources. “Now that we see more, we are starting to understand what it takes to actually put together a news story.” The growth of citizen journalism, for instance, where anyone can take a photograph or video of the news, write about or broadcast what’s going on as it occurs, and publish it online in a matter of minutes, has brought about a new information- and news-gath-

ering experience that forces us to pay closer attention to our sources of information and ultimately choose the most trustworthy and authoritative among numerous options.

“But I don’t think we have seen the solution yet; I still feel like we are grasping” (at finding a way to effectively surf through the noise), adds Glaser. “Editors can help solve the problem of too much information. Or, having a trusted aggregator can help. Digg (and sites like Digg), for instance, with this idea of community aggregation, looks interesting, but I’m not totally sold on that yet. I think there needs to be a killer combination of community-generated news and editors both working in collaboration together.”

### **What’s Next?**

To state the obvious, there are, indeed, numerous answers and tools available to us online. In the next chapters I look closely at what may be considered those “killer combinations,” and much more, that are moving us through the noise in ways that are making us much smarter and better informed. I also explore the dark side of the web, where misinformation runs rampant and where charlatans lurk beneath the surface. Additionally, I provide methods and strategies for effectively dealing with and sifting through all the noise that confronts us online everyday in its myriad forms.

Overall, the World Wide Web is impossible to track effectively. It is loaded with hard-to-find authoritative and trustworthy content and packed with both stupidity and wisdom. It continues to grow at an enormously fast rate through mass digitization and through the adoption of new media. And so far I have only scratched the surface of the web.

Some very important elements of the Internet, the web and today’s information age will be covered throughout this book, including mashups, mobile computing, ubiquitous computing, social networking, cyberinfrastructure, web services, virtual worlds, grid computing, social networking and bookmarking, content aggregators, podcasting, RSS feeds and Ajax and Atom, bit torrent, Library 2.0, the Long Tail, collaborative authorship, and citizen journalism. Plus, there are many other terms and topics of interest related to the information explosion spreading online that I have yet to discover or explore. Each day I am surprised by some new development or turn of events that looks to have the potential of bringing about dramatic change.

At the risk of sounding corny –“Surf’s Up, Dude,” – let’s ride the online knowledge wave, stay balanced, learn how to avoid nasty undertows, know where we are at all times and reach the shoreline safely so we can hop on the next wave.

End Notes:

1. Seth Maislin, "Eighteen million people can't be wrong," Seth Maislin's Indexing Blog," December 28, 2006, <http://maislin.blogspot.com>
2. Jaron Lanier, "Digital Maoism: The Hazards of the New Online Collectivism," Edge, May, 30, 2006, [http://www.edge.org/3rd\\_culture/lanier06/lanier06\\_index.html](http://www.edge.org/3rd_culture/lanier06/lanier06_index.html)
3. Steven Johnson, "Digital Maoism," The New York Times Magazine, 6th Annual Year in Ideas, December 10, 2006.
4. Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven, London: Yale University Press, 2006), 2.
5. James J. Duderstadt, from *The Research Library in the 21st Century Symposium*, The University of Texas at Austin, University of Texas Libraries, September 11, 2006 transcript, pp. 21-22 <http://www.lib.utexas.edu/symposium/>
6. Ibid
7. Bernard Frischer, from *The Research Library in the 21st Century Symposium*, The University of Texas at Austin, University of Texas Libraries, September 12, 2006 transcript, page 10, <http://www.lib.utexas.edu/symposium/>